

SYSTEM AND METHOD FOR ADAPTIVE CONTROL OF UNCERTAIN NONLINEAR PROCESSES

ABSTRACT OF THE DISCLOSURE

A computer system for controlling a nonlinear physical process. The computer system comprises a linear controller and a neural network. The linear controller receives a command signal for control of the nonlinear physical process and a measured output signal from the output of the nonlinear physical process. The linear controller generates a control signal based on the command signal, a measured output signal, and a fixed linear model for the process. The neural network receives the control signal from the linear controller and the measured output signal from the output of the nonlinear physical process. The neural network uses the measured output signal to modify the connection weights of the neural network. The neural network also generates a modified control signal supplied to the linear controller to iterate a fixed point solution for the modified control signal used to control the nonlinear physical process.